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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,260	11/25/2003	Louis G. Kovach II	510703-14	6076
23879 7590 05/20/2008 O'Melveny & Myers LLP IP&T Calendar Department LA-1118 400 South Hope Street Los Angeles, CA 90071-2899				
			EXAMINER	
			AMINZAY, SHAIMA Q	
			ART UNIT	PAPER NUMBER
			2618	
			MAIL DATE	DELIVERY MODE
			05/20/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/723,260

Applicant(s)

KOVACH ET AL.

Examiner

SHAIMA Q. AMINZAY

Art Unit

2618

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-15 and 17-21 is/are rejected.
- 7) ☒ Claim(s) 7-8, 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB08)
- Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Specification Objections

1. The specification is being objected to because, in page 9, 51:1-4 incorporates referenced without a serial number. Applicant's correction is required.

Claim Objections

2. Claim 6 is objected to because of the following informalities: The phrase "a four bits of a twenty-three bit" should change to "-- four bits of twenty-three bits --". Appropriate correction is required

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 18 is rejected under 35 U.S.C. 102(e) as being anticipated by Grubba (Grubba et al. U. S. Publication No. 2005/0285,552).

Regarding claim 18, Grubba discloses a bidirectional communications protocol for communication with a model vehicle (*e.g.*, *Fig 1-2, 2:1-4, 8:2-4, 19:1-10, the bi-directional electronic model (vehicle)*), the communications protocol comprising: a first command set belonging to a legacy uni-directional communication protocol (*e.g.*, *Fig 1-2, 75:1-13, 76:1-14, the communication system (Fig. 1) remote control command (first command set) transmitted via remote controller (1) is the existing (legacy) uni-directional protocol*); and a second command set extended from the first command set and comprising a command inquiry signal for transmission by a control element in communication with a model vehicle (*e.g.*, *Fig 1-2, 75:1-13, 76:1-14, the communication system (Fig. 2) remote control command (second command set) transmitted via remote controller (1) that is based on the original (legacy) control commands transmitted via bi-directional protocol*), and a response signal for transmission by the model vehicle in reply to the command inquiry signal (*e.g.*, *22:9-18, 76:1-14, 77:1-8, the response to remote controller (1) request (inquiry) command is being sent from the electronic model (vehicle)*).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 9-15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grubba (Grubba et al. U. S. Publication No. 2005/0285,552) in view of Lo Galbo (Lo Galbo et al., U.S. Patent No. 5,280,629).

Regarding claim 1, Grubba discloses a method of conducting bi-directional communication with a model vehicle (*e.g.*, 2:1-4, 8:2-4, 19:1-10, *the bi-directional electronic model (vehicle)*), the method comprising: transmitting a command inquiry signal to the model vehicle from a control unit during a first communication period (*e.g.*, Fig 2-3, 20:38-48, 22:9-18, 77:1-8, *the command request (inquiry) signal is transmitted to the electronic model (vehicle) from the controller unit (1) within a communication period (first)*); [automatically] pausing transmission by the control unit during the entirety of a second communication period immediately following the first communication period (*e.g.*, Fig 2-3, 20:38-48, 22:9-18, 77:1-8, *the transmitter after the transmission (first period) instantly waits (pausing) and listens in another period*

(second)); causing the model vehicle to transmit a response signal during the second communication period (e.g., 22:9-18, 76:1-14, 77:1-8, the electronic model (vehicle) responses back in a communication period (second) to the controller after receiving the command (first period)); and [automatically] resuming transmission by the control unit at the conclusion of the second communication period (e.g., 20:38-48, 22:9-18, 76:1-14, 77:1-8, the bi-directional communication is continued between the remote controller (1) and the electronic model (vehicle) after the response from the electronic model (vehicle) received by the remote controller).

Grubba does not specifically teach the automatically transmission, however, Grubba teaches the bi-directional communication between the remote controller (1) and the electronic model (vehicle) with request and response transmission (*e.g., 20:38-48, 22:9-18, 76:1-14, 77:1-8*)).

In related art dealing with remote control transmission (*e.g., Fig 1-2, 2:20-23, 3:47-52*), Lo Galbo teaches the automatically transmission (*e.g., Fig 1-2, 2:20-23, 3:47-52, 6:18-25*).

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Lo Galb's automatic transmission between the remote controller (prime) and remote device with Grubba's transmission between the remote controller (1) and remote device to provide the communication system with improved remote control transmission (Lo Galb, *e.g., 2:3-4, 3:50-52, 6:18-25*).

Regarding claim 12, Grubba discloses a system for interrogating a model vehicle (*e.g.,*

2:1-4, 8:2-4, 19:1-10), the system comprising: a control unit (e.g. Fig. 1-3, remote controller (1)) including, a first receiver (e.g. Fig. 1-3, 75:1-3, 77:1-4, the remote controller receiver (first receiver)); a first transmitter in electrical communication with a model vehicle (e.g. Fig. 1-3, 75:1-3, 77:1-4, the remote controller transmitter (first transmitter) in communication with the electrical model (vehicle)), the first transmitter configured to transmit a command inquiry signal during a first communication period (e.g., Fig 2-3, 20:38-48, 22:9-18, 77:1-8, the remote controller transmitter (first transmitter) transmits the request (inquiry) command signal during a period (first)), and configured to [automatically] pause transmission for an entirety of a second communication period immediately following the first communication period (e.g., Fig 2-3, 20:38-48, 22:9-18, 77:1-8, the transmitter after the transmission (first period) instantly waits (pausing) and listens within another period (second)); and a model vehicle including (e.g., Fig. 1-2, 2:1-4, 8:2-4, 19:1-10, the electronic model (vehicle)), an antenna in electrical communication with the control unit and configured to receive the command inquiry signal therefrom (e.g., Fig. 1-2, 22:38-43, 75:1-3, 76:1-14, the electrical model (vehicle) is determined to receive the request (inquiry) command from the remote controller with antenna); a second receiver in configured to receive the command inquiry signal from the antenna (e.g., Fig. 1-2, 22:38-43, 75:1-3, 76:1-14, the electrical model (vehicle) is determined to receive via receiver (second receiver) the request (inquiry) command from the antenna); and a second transmitter configured to transmit a response signal to the antenna during the second communication period in reply to the command inquiry signal (e.g., 20:38-43, 22:9-18, 75:1-3, 76:1-14, the

electronic model (vehicle) transmitter (second transmitter) transmits responses back to remote controller in the next period (second communication period)), wherein the control unit is configured to recognize the response signal (e.g., 20:38-43, 22:9-18, 76:1-14, 77:1-8, the remote controller (controller unit) is determined to identify the response).

Grubba does not specifically teach the automatically transmission, however, Grubba teaches the bi-directional communication between the remote controller (1) and the electronic model (vehicle) with request and response transmission (e.g., 20:38-48, 22:9-18, 76:1-14, 77:1-8))

In related art dealing with remote control transmission (e.g., Fig 1-2, 2:20-23, 3:47-52), Lo Galbo teaches the automatically transmission (e.g., Fig 1-2, 2:20-23, 3:47-52, 6:18-25).

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Lo Galb's automatic transmission between the remote controller (prime) and remote device with Grubba's transmission between the remote controller (1) and remote device to provide the communication system with improved remote control transmission (Lo Galb, e.g., 2:3-4, 3:50-52, 6:18-25).

Regarding claim 2, Grubba in view of Lo Galbo teach all the limitations of claim 1, and further, Grubba teaches wherein the command inquiry signal and the response signal are transmitted utilizing a bi-directional communication protocol adapted from an existing uni-directional communication protocol (e.g., Fig 1-2, 75:1-13, 76:1-14, the communication system (Fig. 1) remote control command (first command set) transmitted

via remote controller (1) is the existing (legacy) uni-directional protocol).

Regarding claim 3, Grubba in view of Lo Galbo teach all the limitations of claim 2, further, Grubba teaches wherein legacy model vehicles configured to interpret only the existing uni-directional communication protocol interpret the command inquiry (*e.g., Fig 1-2, 75:1-13, 76:1-14*), and further, Lo Galbo teaches a communication error (*e.g., 1:31-34, 8:5-7, 16-20*).

Regarding claim 4, Grubba in view of Lo Galbo teach all the limitations of claim 2, and further, Grubba teaches wherein where the control unit [automatically] transmits a no operation signal for two consecutive communication periods following the second communication period if the base station fails to receive the response signal (*e.g., Fig 2-3, 20:38-48, 22:9-18, 77:1-8*).

Regarding claim 7, Grubba in view of Lo Galbo teach all the limitations of claim 2, and further, Grubba teaches wherein the bi-directional communication protocol is adapted by varying a state of a space-filling code of the uni-directional communication protocol (*e.g., Fig 1-2, 75:1-13, 76:1-14*).

Regarding claim 9, Grubba in view of Lo Galbo teach all the limitations of claim 1, and further, Grubba teaches wherein the command inquiry signal includes address information specific to particular model vehicle, and the response signal also includes the

address information (*e.g.*, 20:23-48, 22:9-18, 76:1-14, 77:1-8).

Regarding claim 10, Grubba in view of Lo Galbo teach all the limitations of claim 1, and further, Grubba teaches wherein the response signal includes information relating to at least one of the location, speed, direction of movement, identity, and health of the model vehicle (*e.g.*, 20:23-48, 22:9-18, 52:13-15, 76:1-14, 77:1-8).

Regarding claim 11, Grubba in view of Lo Galbo teach all the limitations of claim 1, and further, Grubba teaches receiving the command inquiry signal on an antenna of a model train locomotive (*e.g.*, *Fig. 1-2*, 22:38-43, 75:1-3, 76:1-14).

Regarding claim 13, Grubba in view of Lo Galbo teach all the limitations of claim 12, and further, Grubba teaches wherein: the control unit further comprises a first element configured in a first state to place the first transmitter in electrical communication with the track to transmit the command inquiry signal (*e.g.*, *Fig. 2-3*, 20:38-48, 22:9-18, 77:1-8), and configured in a second state to place the first receiver in electrical communication with the track to receive the response signal (*e.g.*, *Fig. 2-3*, 20:38-48, 22:9-18, 77:1-8); and the model vehicle further comprises (*e.g.*, *Fig. 1-2*, 2:1-4, 8:2-4, 19:1-10) a second element configured in a first state to place the second receiver in electrical communication with the antenna to receive the command inquiry signal (*e.g.*, *Fig. 1-2*, 22:38-43, 75:1-3, 76:1-14), and configured in a second state to place the second transmitter in electrical communication with the antenna to transmit the response signal

(e.g., 20:38-43, 22:9-18, 76:1-14, 77:1-8).

Regarding claim 14, Grubba in view of Lo Galbo teach all the limitations of claim 13, and further, Grubba teaches wherein the at least one of the first and second elements comprises an active switch controlled by a processor (*e.g., 22:9-18, 76:1-14, 77:1-8, 84:1-14*).

Regarding claim 15, Grubba in view of Lo Galbo teach all the limitations of claim 12, and further, Grubba teaches wherein the first receiver and the first transmitter are in wired communication with a model railroad track, and the antenna is positioned on a model railroad locomotive (*e.g., Fig. 1-2, 22:38-43, 75:1-3, 76:1-14*).

Regarding claim 17, Grubba in view of Lo Galbo teach all the limitations of claim 12, and further, Grubba teaches wherein the model vehicle comprises a remote-control vehicle, the first receiver and the first transmitter are in wireless communication with the model vehicle, and the antenna is positioned within the model vehicle (*e.g., Fig. 1-2, 22:38-43, 21:1-13, 75:1-3, 76:1-14*).

5. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grubba (Grubba et al. U. S. Publication No. 2005/0285,552) in view of Lo Galbo (Lo Galbo et al., U.S. Patent No. 5,280,629), and further in view of Uota (Uota, U.S. Patent No. 6,292,470).

Regarding claim 5, Grubba in view of Lo Galbo teach all the limitations of claim 2, further, Grubba teaches wherein the bi-directional communication protocol is adapted by varying a state of an error [detection code] of the uni-directional communication protocol (*e.g.*, *Fig 1-2, 75:1-13, 76:1-14*), and further, Lo Galbo teaches a communication error (*e.g.*, *1:31-34, 8:5-7, 16-20*). However, Grubba in view of Lo Galbo does not specifically teach the error detection. In related art dealing with communication system data transmission (*e.g.*, *2:46-49, 4:66-67, 5:1-10*), Uota teaches error detection in communication system (*e.g.*, *5:1-10, 33-60*).

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Uota's communication system data transmission error-detection with Lo Galb's and Grubba's communication system data transmission between the remote controller and remote device to provide the communication system with an effective error detection to save transmission time in "normal sequential transmission of frames" (*Uota, e.g. 2:33-36, 46-49, 6:31-32*).

Regarding claim 6, Grubba in view of Lo Galbo and in view of Uota teach all the limitations of claim 5, further, Uota teaches wherein the error detection code comprises a four bits of a twenty-three bit signal packet (*e.g.*, *5:1-10, 33-60*).

6. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grubba (Grubba et al. U. S. Publication No. 2005/0285,552) in view of Uota (Uota, U.S. Patent

No. 6,292,470).

Regarding claim 19, Grubba teaches all the limitations of claim 18, and further, Grubba teaches wherein the command inquiry signal and the response signal comprise a [twenty-three bit] signal packet (*e.g.*, 22:9-18, 76:1-14, 77:1-8). However, Grubba does not specifically teach the packet bits. In related art dealing with communication system data transmission (*e.g.*, 2:46-49, 4:66-67, 5:1-10), Uota teaches packet bits in communication system (*e.g.*, 5:1-10, 33-60).

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Uota's communication system packet data transmission error-detection with Lo Galb's and Grubba's communication system data transmission between the remote controller and remote device to provide the communication system with an effective error detection to save transmission time in "normal sequential transmission of frames" (*Uota, e.g.* 2:33-36, 46-49, 6:31-32).

Regarding claim 20, Grubba in view of Uota teach all the limitations of claim 19, and further, Uota teaches wherein second command set includes error detection information recognizable to indicate the second command set.

Regarding claim 21, Grubba in view of Uota teach all the limitations of claim 19, and further, Uota teaches wherein the second (*e.g.*, 5:1-10, 33-60). command set includes space-filling information recognizable to indicate the second

command set (e.g., 5:1-10, 33-60).

Allowable Subject Matter

7. Claims 7-8 and 16 are objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art specifically Grubba and Lo Galbo failed to render obviousness and failed to anticipate the following underlined limitations:

“A method of conducting bi-directional communication with a model vehicle, the method comprising: transmitting a command inquiry signal to the model vehicle from a control unit during a first communication period; automatically pausing transmission by the control unit during the entirety of a second communication period immediately following the first communication period; causing the model vehicle to transmit a response signal during the second communication period; and automatically resuming transmission by the control unit at the conclusion of the second communication period”, “wherein the command inquiry signal and the response signal are transmitted utilizing a bi-directional communication protocol adapted from an existing uni-directional communication protocol”, “wherein the bi-directional communication protocol is adapted by varying a state of a space-filling code of the uni-directional communication protocol”.

and “wherein the space filling code comprises at least one of three trailing bits of a twenty-three bit signal packet” as disclosed in claims 1, 2, 7, and 8.

“A system for interrogating a model vehicle, the system comprising: a control unit including, a first receiver; a first transmitter in electrical communication with a model vehicle, the first transmitter configured to transmit a command inquiry signal during a first communication period, and configured to automatically pause transmission for an entirety of a second communication period immediately following the first communication period; and a model vehicle including, an antenna in electrical communication with the control unit and configured to receive the command inquiry signal therefrom; a second receiver in configured to receive the command inquiry signal from the antenna; and a second transmitter configured to transmit a response signal to the antenna during the second communication period in reply to the command inquiry signal, wherein the control unit is configured to recognize the response signal”, and “further comprising a stationary track element including, a second antenna in wireless communication with the track; a third receiver in configured to receive the command inquiry signal from the second antenna; and a third transmitter configured to transmit a third signal to the second antenna in response to the command inquiry signal, wherein at least one of the base unit and the model vehicle are configured to receive and recognize the third signal as returned by the stationary track element” as disclosed in claims 12, and 16.

Conclusion

The prior art made of record considered pertinent to applicant's disclosure, see PTO-892 form.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shaima Q. Aminzay whose telephone number is 571-272-7874. The examiner can normally be reached on 7:00 AM -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mathew D. Anderson can be reached on 571-272-4177. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Shaima Q. Aminzay/
Primary Examiner, Art Unit 2618

May 15, 2008